

CLAIMS

1. A chip package comprising:

a leadframe including a die attach pad centrally located therein and a plurality of wire bonding pads peripherally located therein;

at least one aperture in the die attach pad;

at least one die formed on the die attach pad;

at least one bonding wire for electrically connecting the die and the wire bonding pads; and

a mold compound for encapsulating the die and the bonding wire to form a chip package, wherein the mold compound is formed in the aperture.

2. The chip package of claim 1, wherein the aperture is formed fully through the die attach pad.

3. The chip package of claim 1, wherein the aperture is formed partially through the die attach pad.

4. The chip package of claim 1, wherein the aperture is formed using a combination of a full etch process and a half etch process.

5. The chip package of claim 1, wherein the shape of the aperture is one of the following: a rectangle, a square, an oval, a triangle, a circle, or a combination thereof.

PATENT

**Express Mail No EL663032045US
Attorney Docket No. 17658
S&L File No. P-24,989-A USA**

6. The chip package of claim 1, wherein the chip package is a leadframe-based Chip Scale Package.

7. The chip package of claim 1, wherein the aperture includes a plurality of apertures formed around the at least one die.

8. The chip package of claim 7, wherein the at least one die includes at least first and second dies, and at least one of the plurality of apertures is disposed between the first and second dies.

9. The chip package of claim 1, wherein the aperture extends horizontally, vertically, or diagonally.

10. A method of providing a chip package, comprising the steps of:
providing a leadframe including a die attach pad centrally located therein and a plurality of wire bonding pads peripherally located therein;
providing at least one aperture in the die attach pad;
providing at least one die on the die attach pad;
providing at least one bonding wire for electrically connecting the die and the wire bonding pads; and
providing a mold compound for encapsulating the die and the bonding wire to form a chip package, wherein the mold compound is formed in the aperture.

PATENT

**Express Mail No EL663032045US
Attorney Docket No. 17658
S&L File No. P-24,989-A USA**

11. The method of claim 10, wherein the step of providing the aperture includes:
forming the aperture fully through the die attach pad.

12. The method of claim 10, wherein the step of providing the aperture includes:
forming the aperture partially through the die attach pad.

5 13. The method of claim 10, wherein the step of providing the aperture includes:
forming the aperture through the die attach pad using a combination of a full etch
process and a half etch process.

14. The method of claim 10, wherein the shape of the aperture is one of the following:
a rectangle, a square, an oval, a triangle, a circle, or a combination thereof.

10 15. The method of claim 10, wherein the chip package is a leadframe-based Chip Scale
Package.

16. The method of claim 10, wherein the aperture includes a plurality of apertures
formed around the at least one die.

15 17. The method of claim 16, wherein the at least one die includes a plurality of dies, and
at least one of the plurality of apertures is disposed between the plurality of dies.

PATENT

Express Mail No EL663032045US
Attorney Docket No. 17658
S&L File No. P-24,989-A USA

18. The method of claim 10, wherein the aperture extends horizontally, vertically, or diagonally.

Year	Country	Population (millions)	Urban population (millions)	Urban population (%)
1950	United States	150	80	53
1950	France	45	25	56
1950	Germany	65	35	54
1950	Italy	45	20	44
1950	Japan	90	40	44
1950	India	360	10	3
1950	China	550	5	1
1950	U.S.S.R.	160	10	6
1950	Latin America	250	10	4
1950	Sub-Saharan Africa	200	5	2
1950	Asia (excl. Japan)	700	10	1
1950	World	2500	100	4
1960	United States	160	85	53
1960	France	48	28	58
1960	Germany	68	38	56
1960	Italy	48	22	46
1960	Japan	95	45	47
1960	India	380	15	4
1960	China	600	10	2
1960	U.S.S.R.	170	15	9
1960	Latin America	280	15	5
1960	Sub-Saharan Africa	220	10	4
1960	Asia (excl. Japan)	750	15	2
1960	World	2700	120	4
1970	United States	170	90	53
1970	France	50	30	60
1970	Germany	70	40	57
1970	Italy	50	25	50
1970	Japan	100	50	50
1970	India	420	20	5
1970	China	650	15	2
1970	U.S.S.R.	180	20	11
1970	Latin America	300	20	7
1970	Sub-Saharan Africa	240	15	6
1970	Asia (excl. Japan)	800	20	2
1970	World	2900	140	5
1980	United States	180	95	53
1980	France	52	32	62
1980	Germany	72	42	58
1980	Italy	52	30	58
1980	Japan	110	55	50
1980	India	480	25	5
1980	China	700	20	3
1980	U.S.S.R.	190	25	13
1980	Latin America	320	25	8
1980	Sub-Saharan Africa	260	20	8
1980	Asia (excl. Japan)	850	25	3
1980	World	3100	160	5